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National Testing Agency

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B E and B Tech

Group Number :	1
Group Id :	36669430
Group Maximum Duration :	0
Group Minimum Duration :	180
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	300
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Mathematics Section A

Section Id :	366694166
Section Number :	1

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Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	366694166
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 1 Question Id : 3666943021 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Options :

3666949431. only (S1) is true

3666949432.

3666949433. both (S1) and (S2) are true

3666949434. neither (S1) nor (S2) is true

Question Number : 1 Question Id : 3666943021 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना फलन $f(x)=\frac{1}{\sqrt{\lceil x\rceil - x}}$, जहाँ $\lceil x\rceil$ न्यूनतम पूर्णांक $\geq x$ है, के प्रांत तथा परिसर क्रमशः

समुच्चय A तथा B है। तो कथनों

(S1) : $A\cap B=(1,\infty)-\mathbb{N}$ तथा

(S2) : $A\cup B=(1,\infty)$

में

Options :

3666949431. केवल (S1) सत्य है

3666949432. केवल (S2) सत्य है

3666949433. दोनों (S1) तथा (S2) सत्य हैं

3666949434. न तो (S1) न ही (S2) सत्य है

Question Number : 2 Question Id : 3666943022 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

In a group of 100 persons 75 speak English and 40 speak Hindi. Each person speaks at least one of the two languages. If the number of persons, who speak only English is α and the number of persons who speak only Hindi is β, then the eccentricity of the ellipse $25\left(\beta^2x^2+\alpha^2y^2\right)=\alpha^2\beta^2$ is

Options :

3666949435. $\frac{\sqrt{117}}{12}$

3666949436. $\frac{\sqrt{119}}{12}$

3666949437. $\frac{\sqrt{129}}{12}$

3666949438. $\frac{3\sqrt{15}}{12}$

Question Number : 2 Question Id : 3666943022 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

100 व्यक्तियों के एक समूह में 75 अंग्रेजी बोलते हैं तथा 40 हिंदी बोलते हैं। प्रत्येक व्यक्ति इन दो भाषाओं में से कम से कम एक बोलता है। यदि केवल अंग्रेजी बोलने वाले व्यक्तियों की संख्या α तथा केवल हिंदी बोलने वाले व्यक्तियों की संख्या β है, तो दीर्घवृत्त $25(\beta^2x^2+\alpha^2y^2)=\alpha^2\beta^2$ की उत्केन्द्रता है

Options :

3666949435. $\frac{\sqrt{117}}{12}$

3666949436. $\frac{\sqrt{119}}{12}$

3666949437. $\frac{\sqrt{129}}{12}$

3666949438.

$\frac{3\sqrt{15}}{12}$

Question Number : 3 Question Id : 3666943023 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let $a \neq b$ be two non-zero real numbers. Then the number of elements in the set $X = \{z \in \mathbb{C} : \text{Re}(az^2 + bz) = a \text{ and } \text{Re}(bz^2 + az) = b\}$ is equal to

Options :

3666949439. 0

3666949440. 1

3666949441. 2

3666949442. 3

Question Number : 3 Question Id : 3666943023 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना $a \neq b$ दो शून्येत्तर वास्तविक संख्याएँ है। तो समुच्चय $X = \{z \in \mathbb{C} : \text{Re}(az^2 + bz) = a$ तथा $\text{Re}(bz^2 + az) = b\}$ में अवयवों की संख्या है

Options :

3666949439. 0

3666949440. 1

3666949441. 2

3666949442. 3

Question Number : 4 Question Id : 3666943024 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let P be a square matrix such that $P^2 = I - P$. For $\alpha, \beta, \gamma, \delta \in \mathbb{N}$, if $P^\alpha + P^\beta = \gamma I - 29P$ and $P^\alpha - P^\beta = \delta I - 13P$, then $\alpha + \beta + \gamma - \delta$ is equal to

Options :

3666949443. 40

3666949444. 24

3666949445. 22

3666949446. 18

Question Number : 4 Question Id : 3666943024 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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माना P एक वर्ग आव्यूह है जिसके लिए $P^2 = I - P$ है। $\alpha, \beta, \gamma, \delta \in \mathbb{N}$, के लिए यदि $P^{\alpha} + P^{\beta} = \gamma I - 29P$ तथा $P^{\alpha} - P^{\beta} = \delta I - 13P$ हैं, तो $\alpha + \beta + \gamma - \delta$ बराबर है:

Options :

3666949443. 40

3666949444. 24

3666949445. 22

3666949446. 18

Question Number : 5 Question Id : 3666943025 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

For the system of equations

$x + y + z = 6$

$x + 2y + \alpha z = 10$

$x + 3y + 5z = \beta$, which one of the following is NOT true?

Options :

3666949447. System has a unique solution for $\alpha = -3, \beta = 14$.

3666949448. System has no solution for $\alpha = 3, \beta = 24$.

3666949449. System has infinitely many solutions for $\alpha = 3, \beta = 14$.

3666949450. System has a unique solution for $\alpha=3, \beta\neq 14$.

Question Number : 5 Question Id : 3666943025 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

समीकरण निकाय

$x+y+z=6$

$x+2y+\alpha z=10$

$x+3y+5z=\beta$, के लिए निम्न में से कौन सा सत्य नहीं है?

Options :

3666949447. $\alpha=-3, \beta=14$ के लिए समीकरण निकाय का अद्वितीय हल है

3666949448. $\alpha=3, \beta=24$ के लिए समीकरण निकाय का कोई हल नहीं है

3666949449. $\alpha=3, \beta=14$ के लिए समीकरण निकाय के अनंत हल है

3666949450. $\alpha=3, \beta\neq 14$ के लिए समीकरण निकाय का अद्वितीय हल है

Question Number : 6 Question Id : 3666943026 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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Among the statements:

(S1) : $2023^{2022} - 1999^{2022}$ is divisible by 8

(S2) : $13(13)^n - 11n - 13$ is divisible by 144 for infinitely many $n \in \mathbb{N}$

Options :

3666949451. only (S1) is correct

3666949452. only (S2) is correct

3666949453. both (S1) and (S2) are incorrect

3666949454. both (S1) and (S2) are correct

Question Number : 6 Question Id : 3666943026 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

कथनों:

(S1) : $2023^{2022} - 1999^{2022}$, 8 से विभाज्य है

(S2) : $13(13)^n - 11n - 13$ अनंत $n \in \mathbb{N}$ के लिए 144 से विभाज्य है

में से

Options :

3666949451. केवल (S1) सही है

3666949452. केवल (S2) सही है

3666949453.

(S1) तथा (S2) दोनों गलत हैं

3666949454. (S1) तथा (S2) दोनों सही हैं

Question Number : 7 Question Id : 3666943027 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If the coefficients of x^7 in $\left(ax^2+\frac{1}{2bx}\right)^{11}$ and x^{-7} in $\left(ax-\frac{1}{3bx^2}\right)^{11}$ are equal, then

Options :

3666949455. $32ab=729$

3666949456. $64ab=243$

3666949457. $243ab=64$

3666949458. $729ab=32$

Question Number : 7 Question Id : 3666943027 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि $\left(ax^2+\frac{1}{2bx}\right)^{11}$ में x^7 तथा $\left(ax-\frac{1}{3bx^2}\right)^{11}$ में x^{-7} के गुणांक बराबर हैं, तो

Options :

3666949455. $32ab = 729$

3666949456. $64ab = 243$

3666949457. $243ab = 64$

3666949458. $729ab = 32$

Question Number : 8 Question Id : 3666943028 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

All the letters of the word PUBLIC are written in all possible orders and these words are written as in a dictionary with serial numbers. Then the serial number of the word PUBLIC is

Options :

3666949459. 576

3666949460. 578

3666949461. 580

3666949462. 582

Question Number : 8 Question Id : 3666943028 Question Type : MCQ Option Shuffling : Yes Is

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Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

PUBLIC शब्द के सभी अक्षरों को सभी संभव क्रम में लिखा जाता है तथा इन शब्दों को शब्दकोष के अनुसार क्रम संख्या के साथ लिखा जाता है। तो शब्द PUBLIC की क्रम संख्या है:

Options :

3666949459. 576

3666949460. 578

3666949461. 580

3666949462. 582

Question Number : 9 Question Id : 3666943029 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$\lim_{n \to \infty} \left\{ \left(2^{\frac{1}{2}} - 2^{\frac{1}{3}}\right)\left(2^{\frac{1}{2}} - 2^{\frac{1}{5}}\right) \ldots\ldots \left(2^{\frac{1}{2}} - 2^{\frac{1}{2n+1}}\right) \right\}$ is equal to

Options :

3666949463. 1

3666949464. 0

3666949465. $\frac{1}{\sqrt{2}}$

3666949466. $\sqrt{2}$

Question Number : 9 Question Id : 3666943029 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$\lim_{n\to\infty}\left\{\left(2^{\frac{1}{2}}-2^{\frac{1}{3}}\right)\left(2^{\frac{1}{2}}-2^{\frac{1}{5}}\right)......\left(2^{\frac{1}{2}}-2^{\frac{1}{2n+1}}\right)\right\}$ बराबर है:

Options :

3666949463. 1

3666949464. 0

3666949465. $\frac{1}{\sqrt{2}}$

3666949466. $\sqrt{2}$

Question Number : 10 Question Id : 3666943030 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If gcd (m, n) = 1 and

$1^2-2^2+3^2-4^2+.....+(2021)^2-(2022)^2+(2023)^2=1012\ m^2n$

then m^2-n^2 is equal to

Options :

3666949467. 240

3666949468. 220

3666949469. 200

3666949470. 180

Question Number : 10 Question Id : 3666943030 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि gcd (m, n) = 1 है तथा

$1^2 - 2^2 + 3^2 - 4^2 + ... + (2021)^2 - (2022)^2 + (2023)^2 = 1012\, m^2 n$

है, तो $m^2 - n^2$ बराबर है:

Options :

3666949467. 240

3666949468. 220

3666949469. 200

3666949470. 180

Question Number : 11 Question Id : 3666943031 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

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Correct Marks : 4 Wrong Marks : 1

Let $f(x)$ be a function satisfying $f(x)+f(\pi-x)=\pi^2, \forall x \in \mathbb{R}$.

Then $\int_0^{\pi} f(x)\sin x\,dx$ is equal to

Options :

3666949471. $2\pi^2$

3666949472. $\frac{\pi^2}{4}$

3666949473. $\frac{\pi^2}{2}$

3666949474. π^2

Question Number : 11 Question Id : 3666943031 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना एक फलन $f(x)$ के लिए $f(x)+f(\pi-x)=\pi^2, \forall x \in \mathbb{R}$ है। तो

$\int_0^{\pi} f(x)\sin x\,dx$ बराबर है:

Options :

3666949471. $2\pi^2$

3666949472. $\frac{\pi^2}{4}$

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3666949473. $\frac{\pi^2}{2}$

3666949474. π^2

Question Number : 12 Question Id : 3666943032 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If the solution curve $f(x, y) = 0$ of the differential equation

$(1 + \log_e x)\frac{dx}{dy} - x\log_e x = e^y, x > 0,$ passes through the points (1, 0) and $(\alpha, 2)$,

then α^α is equal to

Options :

3666949475. e^{e^2}

3666949476. $e^{\sqrt{2}e^2}$

3666949477. $e^{2e^{\sqrt{2}}}$

3666949478. e^{2e^2}

Question Number : 12 Question Id : 3666943032 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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यदि अवकल समीकरण $(1+\log_e x)\frac{dx}{dy} - x\log_e x = e^y, x > 0,$ का हल वक्र $f(x, y) = 0$ बिंदुओं (1, 0) तथा $(\alpha, 2)$ से होकर जाता है, तो α^α बराबर है:

Options :

3666949475. e^{e^2}

3666949476. $e^{\sqrt{2}e^2}$

3666949477. $e^{2e^{\sqrt{2}}}$

3666949478. e^{2e^2}

Question Number : 13 Question Id : 3666943033 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If the tangents at the points P and Q on the circle $x^2 + y^2 - 2x + y = 5$ meet at the point $R\left(\frac{9}{4}, 2\right)$, then the area of the triangle PQR is:

Options :

3666949479. $\frac{13}{8}$

3666949480. $\frac{13}{4}$

3666949481. $\frac{5}{8}$

3666949482. $\frac{5}{4}$

Question Number : 13 Question Id : 3666943033 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि वृत्त $x^2+y^2-2x+y=5$ के बिंदुओं P तथा Q पर स्पर्श रेखाएँ बिंदु $R\left(\frac{9}{4}, 2\right)$ पर मिलती हैं, तो त्रिभुज PQR का क्षेत्रफल है:

Options :

3666949479. $\frac{13}{8}$

3666949480. $\frac{13}{4}$

3666949481. $\frac{5}{8}$

3666949482. $\frac{5}{4}$

Question Number : 14 Question Id : 3666943034 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The area bounded by the curves $y=|x-1|+|x-2|$ and $y=3$ is equal to

Options :

3666949483. 3

3666949484. 4

3666949485. 5

3666949486. 6

Question Number : 14 Question Id : 3666943034 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

वक्रों $y = |x-1| + |x-2|$ तथा $y = 3$ से परिबद्ध क्षेत्र का क्षेत्रफल है:

Options :

3666949483. 3

3666949484. 4

3666949485. 5

3666949486. 6

Question Number : 15 Question Id : 3666943035 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

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Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A plane P contains the line of intersection of the plane $\vec{r}\cdot(\hat{i}+\hat{j}+\hat{k})=6$ and $\vec{r}\cdot(2\hat{i}+3\hat{j}+4\hat{k})=-5$. If P passes through the point (0, 2, –2), then the square of distance of the point (12, 12, 18) from the plane P is

Options :

3666949487. 155

3666949488. 310

3666949489. 620

3666949490. 1240

Question Number : 15 Question Id : 3666943035 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक समतल P में, समतलों $\vec{r}\cdot(\hat{i}+\hat{j}+\hat{k})=6$ तथा $\vec{r}\cdot(2\hat{i}+3\hat{j}+4\hat{k})=-5$ की प्रतिच्छेदन रेखा स्थित है। यदि P, बिंदु (0, 2, –2) से होकर जाता है, तो बिंदु (12, 12, 18) की समतल P से दूरी का वर्ग है:

Options :

3666949487. 155

3666949488. 310

3666949489. 620

3666949490. 1240

Question Number : 16 Question Id : 3666943036 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let the line L pass through the point (0, 1, 2), intersect the line $\frac{x-1}{2}=\frac{y-2}{3}=\frac{z-3}{4}$ and be parallel to the plane $2x+y-3z=4$. Then the distance of the point P(1, –9, 2) from the line L is

Options :

3666949491. $\sqrt{54}$

3666949492. $\sqrt{69}$

3666949493. $\sqrt{74}$

3666949494. 9

Question Number : 16 Question Id : 3666943036 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना रेखा L, बिंदु (0, 1, 2) से होकर जाती है, रेखा $\frac{x-1}{2}=\frac{y-2}{3}=\frac{z-3}{4}$ को काटती है तथा समतल $2x+y-3z=4$ के समांतर है। तो बिंदु P(1, –9, 2) की रेखा L से दूरी है:

Options :

3666949491. $\sqrt{54}$

3666949492. $\sqrt{69}$

3666949493. $\sqrt{74}$

3666949494. 9

Question Number : 17 Question Id : 3666943037 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The sum of all values of α, for which the points whose position vectors are $\hat{i}-2\hat{j}+3\hat{k}$, $2\hat{i}-3\hat{j}+4\hat{k}$, $(\alpha+1)\hat{i}+2\hat{k}$ and $9\hat{i}+(\alpha-8)\hat{j}+6\hat{k}$ are coplanar, is equal to

Options :

3666949495. -2

3666949496. 2

3666949497. 4

3666949498. 6

Question Number : 17 Question Id : 3666943037 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

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Correct Marks : 4 Wrong Marks : 1

α के सभी मानो, जिनके लिए स्थिति सदिशों $\hat{i}-2\hat{j}+3\hat{k}$, $2\hat{i}-3\hat{j}+4\hat{k}$, $(\alpha+1)\hat{i}+2\hat{k}$ तथा $9\hat{i}+(\alpha-8)\hat{j}+6\hat{k}$ के बिंदु सहतलीय हैं, का योग बराबर है:

Options :

3666949495. -2

3666949496. 2

3666949497. 4

3666949498. 6

Question Number : 18 Question Id : 3666943038 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let the vectors $\vec{a}, \vec{b}, \vec{c}$ represent three coterminous edges of a parallelopiped of volume V. Then the volume of the parallelopiped, whose coterminous edges are represented by $\vec{a}, \vec{b}+\vec{c}$ and $\vec{a}+2\vec{b}+3\vec{c}$ is equal to:

Options :

3666949499. V

3666949500. 2 V

3666949501. 3 V

3666949502. 6 V

Question Number : 18 Question Id : 3666943038 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना सदिश $\vec{a}, \vec{b}, \vec{c}$ आपतन V के एक समांतर षट्फलक के सहावसानी किनारों को निरुपित करते है। तो उस समांतर षटफक, जिसके सहावसानी किनारे सादिशों $\vec{a}, \vec{b}+\vec{c}$ तथा $\vec{a}+2\vec{b}+3\vec{c}$ से निरुपित होते हैं, का आयतन बराबर है:

Options :

3666949499. V

3666949500. 2 V

3666949501. 3 V

3666949502. 6 V

Question Number : 19 Question Id : 3666943039 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Three dice are rolled. If the probability of getting different numbers on the three dice is $\frac{p}{q}$, where p and q are co-prime, then $q - p$ is equal to

Options :

3666949503. 4

3666949504. 3

3666949505. 2

3666949506. 1

Question Number : 19 Question Id : 3666943039 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

तीन पासे फेंके जाते हैं। यदि तीनों पासों पर भिन्न संख्याएँ प्राप्त करने की प्रायिकता $\frac{p}{q}$ है, जहाँ p तथा q असहभाज्य हैं, तो $q-p$ बराबर है:

Options :

3666949503. 4

3666949504. 3

3666949505. 2

3666949506. 1

Question Number : 20 Question Id : 3666943040 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

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Correct Marks : 4 Wrong Marks : 1

Among the statements

(S1): $(p \Rightarrow q) \vee ((\sim p) \wedge q)$ is a tautology

(S2): $(q \Rightarrow p) \Rightarrow ((\sim p) \wedge q)$ is a contradiction

Options :

3666949507. only (S1) is True

3666949508. only (S2) is True

3666949509. both (S1) and (S2) are True

3666949510. neither (S1) and (S2) is True

Question Number : 20 Question Id : 3666943040 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

कथनों

(S1): $(p \Rightarrow q) \vee ((\sim p) \wedge q)$ पुनरुक्ति है

(S2): $(q \Rightarrow p) \Rightarrow ((\sim p) \wedge q)$ विरोधोक्ति है

में से

Options :

3666949507. केवल (S1) सत्य है

3666949508. केवल (S2) सत्य है

3666949509. दोनों (S1) तथा (S2) सत्य हैं

3666949510. न तो (S1) न ही (S2) सत्य है

Mathematics Section B

Section Id :	366694167
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	5
Section Marks :	20
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	366694167
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 21 Question Id : 3666943041 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

For $\alpha, \beta, z \in \mathbb{C}$ and $\lambda > 1$, if $\sqrt{\lambda - 1}$ is the radius of the circle $|z-\alpha|^2 + |z-\beta|^2 = 2\lambda$, then $|\alpha - \beta|$ is equal to ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 21 Question Id : 3666943041 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$\alpha, \beta, z \in \mathbb{C}$ तथा $\lambda > 1$ के लिए, यदि वृत्त $|z-\alpha|^2 + |z-\beta|^2 = 2\lambda$ की त्रिज्या $\sqrt{\lambda - 1}$ है, तो $|\alpha - \beta|$ बराबर है __________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 22 Question Id : 3666943042 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The number of 4-letter words, with or without meaning, each consisting of 2 vowels and 2 consonants, which can be formed from the letters of the word UNIVERSE without repetition is __________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

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Text Areas : PlainText

Possible Answers :

10

Question Number : 22 Question Id : 3666943042 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

बिना पुनरावृत्ति के UNIVERSE शब्द के अक्षरों से बनाए जा सकने वाले 4 अक्षरों, जिनमें 2 स्वर तथा 2 व्यंजक हों, के अर्थपूर्ण या अर्थहीन शब्दों की संख्या है ___________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 23 Question Id : 3666943043 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If $(20)^{19}+2(21)(20)^{18}+3(21)^2(20)^{17}+\ldots+20(21)^{19}=k(20)^{19}$, then k is equal to ___________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 23 Question Id : 3666943043 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि $(20)^{19}+2(21)(20)^{18}+3(21)^{2}(20)^{17}+\ldots+20(21)^{19}=k(20)^{19}$ है, तो k बराबर है ____________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 24 Question Id : 3666943044 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The number of points, where the curve $y=x^5-20x^3+50x+2$ crosses the x-axis, is ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 24 Question Id : 3666943044 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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उन बिंदुओं, जहाँ वक्र $y = x^5 - 20x^3 + 50x + 2$, x-अक्ष को काटता है, की संख्या है ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 25 Question Id : 3666943045 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let a curve $y = f(x), x \in (0, \infty)$ pass through the points $P\left(1, \frac{3}{2}\right)$ and $Q\left(a, \frac{1}{2}\right)$. If the tangent at any point $R(b, f(b))$ to the given curve cuts the y-axis at the point $S(0, c)$ such that $bc = 3$, then $(PQ)^2$ is equal to ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 25 Question Id : 3666943045 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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माना एक वक्र $y = f(x), x \in (0, \infty)$ बिंदुओं $P\left(1, \frac{3}{2}\right)$ तथा $Q\left(a, \frac{1}{2}\right)$ से होकर जाता है। यदि दिए गए वक्र के किसी भी बिंदु $R(b, f(b))$ पर स्पर्श देखा y-अक्ष को बिंदु $S(o, c)$ पर काटती है जबकि $bc = 3$, तो $(PQ)^2$ बराबर है ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 26 Question Id : 3666943046 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let $f(x) = \frac{x}{(1+x^n)^{\frac{1}{n}}}, x \in \mathbb{R} - \{-1\}, n \in \mathbb{N}, n > 2$.

If $f^n(x) = (fofof\text{..... upto } n \text{ times})(x)$, then $\lim_{n \to \infty} \int_0^1 x^{n-2}(f^n(x))dx$ is equal to

________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 26 Question Id : 3666943046 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना $f(x) = \frac{x}{(1+x^n)^{\frac{1}{n}}}, x \in \mathbb{R} - \{-1\}, n \in \mathbb{N}, n > 2$ हैं।

यदि $f^n(x) = (fofof..... n$ बार) (x) है तो $\lim_{n\to\infty} \int_0^1 x^{n-2}(f^n(x))dx$ बराबर है

__________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 27 Question Id : 3666943047 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Let the eccentricity of an ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ is reciprocal to that of the hyperbola $2x^2 - 2y^2 = 1$. If the ellipse intersects the hyperbola at right angles, then square of length of the latus-rectum of the ellipse is __________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 27 Question Id : 3666943047 Question Type : SA Calculator : None

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Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

माना एक दीर्घवृत्त $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$ की उत्केन्द्रता, अतिपरवलप $2x^2-2y^2=1$ की उत्केन्द्रता की व्युत्क्रम (reciprocal) है। यदि दीर्घवृत्त, अतिपरवलय को लंबवत काटता है, तो दीर्घवृत्त की नाभिलंब जीवा की लंबाई का वर्ग है ___________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 28 Question Id : 3666943048 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If the lines $\frac{x-1}{2}=\frac{2-y}{-3}=\frac{z-3}{\alpha}$ and $\frac{x-4}{5}=\frac{y-1}{2}=\frac{z}{\beta}$ intersect, then the magnitude of the minimum value of $8\alpha\beta$ is ___________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 28 Question Id : 3666943048 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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यदि रेखाएँ $\frac{x-1}{2}=\frac{2-y}{-3}=\frac{z-3}{\alpha}$ तथा $\frac{x-4}{5}=\frac{y-1}{2}=\frac{z}{\beta}$ एक दूसरे को काटती हैं, तो $8\alpha\beta$ के न्यूनतम मान का परिमाण है ___________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 29 Question Id : 3666943049 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If the mean and variance of the frequency distribution

x_i	2	4	6	8	10	12	14	16
f_i	4	4	α	15	8	β	4	5

are 9 and 15.08 respectively, then the value of $\alpha^2+\beta^2-\alpha\beta$ is ___________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 29 Question Id : 3666943049 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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यदि बारंबारता बंटन

x_i	2	4	6	8	10	12	14	16
f_i	4	4	α	15	8	β	4	5

के माध्य तथा प्रसरण क्रमशः 9 तथा 15.08 हैं, तो $\alpha^2+\beta^2-\alpha\beta$ का मान है ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 30 Question Id : 3666943050 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The value of $\tan 9° - \tan 27° - \tan 63° + \tan 81°$ is ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 30 Question Id : 3666943050 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$\tan 9° - \tan 27° - \tan 63° + \tan 81°$ का मान है ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Physics Section A

Section Id :	366694168
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	366694168
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 31 Question Id : 3666943051 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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A 2 meter long scale with least count of 0.2 cm is used to measure the locations of objects on an optical bench. While measuring the focal length of a convex lens, the object pin and the convex lens are placed at 80 cm mark and 1m mark, respectively. The image of the object pin on the other side of lens coincides with image pin that is kept at 180 cm mark. The % error in the estimation of focal length is:

Options :

3666949521. 0.51

3666949522. 0.85

3666949523. 1.02

3666949524. 1.70

Question Number : 31 Question Id : 3666943051 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक प्रकाशिक बेंच पर वस्तुओं की स्थिति मापने में 0.2 cm अल्पतमांक के साथ एक 2 मीटर लम्बे पैमाने का उपयोग किया गया है। जबकि एक उत्तल लैंस की फोकस दूरी मापने में, वस्तु पिन व उत्तल लैंस क्रमश: 80 cm व 1 m के चिन्ह पर स्थित हैं। वस्तु पिन का प्रतिबिम्ब लैंस के दूसरी ओर प्रतिबिम्ब पिन से मिलता है ताकि इसे 180 cm चिन्ह पर रखा जाये। फोकस दूरी की गणना में % त्रुटि है:

Options :

3666949521. 0.51

3666949522. 0.85

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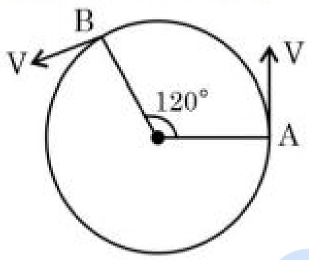
3666949523. 1.02

3666949524. 1.70

Question Number : 32 Question Id : 3666943052 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

As shown in the figure, a particle is moving with constant speed π m/s. Considering its motion from A to B, the magnitude of the average velocity is:



Options :

3666949525. π m/s

3666949526. $\sqrt{3}$ m/s

3666949527. $1.5\sqrt{3}$ m/s

3666949528. $2\sqrt{3}$ m/s

Question Number : 32 Question Id : 3666943052 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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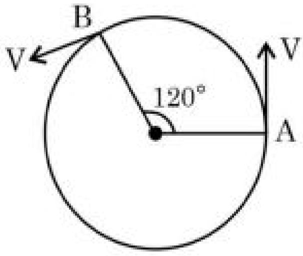
प्रदर्शित चित्र में, एक कण नियत चाल π m/s से गति करता है। बिन्दु A से B तक की गीत के लिए इसके औसत वेग का परिमाण है:



Options :

3666949525. π m/s

3666949526. $\sqrt{3}$ m/s

3666949527. $1.5\sqrt{3}$ m/s

3666949528. $2\sqrt{3}$ m/s

Question Number : 33 Question Id : 3666943053 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A particle starts with an initial velocity of 10.0 ms^{-1} along x-direction and accelerates uniformly at the rate of 2.0 ms^{-2}. The time taken by the particle to reach the velocity of 60.0 ms^{-1} is __________.

Options :

3666949529. 6s

3666949530. 25s

3666949531. 30s

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3666949532. 3s

Question Number : 33 Question Id : 3666943053 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक कण 10.0 ms^{-1} के एक प्रारम्भिक वेग से x-दिशा के अनुदिश गति प्रारम्भ करता है तथा 2.0 ms^{-2} की एकसमान दर से त्वरित होता है। वेग को 60.0 ms^{-1} तक पहुँचने में कण द्वारा लिया गया समय है:

Options :

3666949529. 6s

3666949530. 25s

3666949531. 30s

3666949532. 3s

Question Number : 34 Question Id : 3666943054 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A child of mass 5 kg is going round a merry-go-round that makes 1 rotation in 3.14 s. The radius of the merry-go-round is 2 m. The centrifugal force on the child will be

Options :

3666949533.

40 N

3666949534. 50 N

3666949535. 80 N

3666949536. 100 N

Question Number : 34 Question Id : 3666943054 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

5 किग्रा द्रव्यमान का एक बच्चा एक झुले नुमा गोल चक्र (मैरी-गो-राउण्ड) का चक्कर लगाता है जो 3.14 s में एक चक्कर पूरा करता है। इस गोल चक्र की त्रिज्या 2 m है। बच्चे पर लगने वाला अपकेन्द्र बल होगा:

Options :

3666949533. 40 N

3666949534. 50 N

3666949535. 80 N

3666949536. 100 N

Question Number : 35 Question Id : 3666943055 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

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Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Choose the incorrect statement from the following:

Options :

3666949537. When a body falls towards earth, the displacement of earth towards the body is negligible.

3666949538. The speed of satellite in a given circular orbit remains constant.

3666949539. For a planet revolving around the sun in an elliptical orbit, the total energy of the planet remains constant.

3666949540. The linear speed of a planet revolving around the sun remains constant.

Question Number : 35 Question Id : 3666943055 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित से गलत कथन चुनिए:

Options :

3666949537. जब एक पिण्ड की ओर गिरता है, पृथ्वी का पिण्ड की ओर विस्थापन नगण्य होता है।

3666949538. एक दी गई वृत्ताकार कक्षा में उपग्रह की चाल नियत रहती है।

3666949539. सूर्य के परित: एक दीर्घवृत्ताकार कक्षा में परिक्रमण करते हुए ग्रह के लिए, ग्रह की कुल ऊर्जा नियत रहती है।

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3666949540. सूर्य के परित: परिक्रमण गति करते हुए ग्रह की रेखीय चाल नियत रहती है।

Question Number : 36 Question Id : 3666943056 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The weight of a body on the surface of the earth is 100 N. The gravitational force on it when taken at a height, from the surface of earth, equal to one-fourth the radius of the earth is:

Options :

3666949541. 25 N

3666949542. 50 N

3666949543. 64 N

3666949544. 100 N

Question Number : 36 Question Id : 3666943056 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

पृथ्वी की सतह पर एक पिण्ड का भार 100 N है। इस पर लगने वाला गुरुत्वाकर्षण बल, जब पृथ्वी की त्रिज्या के एक चौथाई के बराबर एक ऊँचाई पर ले जाने पर, है:

Options :

3666949541. 25 N

3666949542. 50 N

3666949543. 64 N

3666949544. 100 N

Question Number : 37 Question Id : 3666943057 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: When you squeeze one end of a tube to get toothpaste out from the other end, Pascal's principle is observed.

Reason R: A change in the pressure applied to an enclosed incompressible fluid is transmitted undiminished to every portion of the fluid and to the walls of its container.

In the light of the above statements, choose the **most appropriate** answer from the options given below

Options :

3666949545. Both **A** and **R** are correct and **R** is the correct explanation of **A**

3666949546. Both **A** and **R** are correct but **R** is **NOT** the correct explanation of **A**

3666949547. **A** is correct but **R** is not correct

3666949548. **A** is not correct but **R** is correct

Question Number : 37 Question Id : 3666943057 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिये गये है: एक को अभिकथन A तथा दूसरे को कारण R से चिन्हित किया गया है

अभिकथन A: जब आप ट्यूब के एक सिरे दबाते है तो इसके दूसरे सिरे से टूथपेस्ट बाहर आता हैस पास्कल के नियम का आंकलन होता है।

कारण R: एक बन्द असंपीड्य द्रव पर आरोपित दाब में एक परिवर्तन द्रव के प्रत्येक भाग एवं बर्तन की अपनी दीवारों को बिना कम किये पारगमित हो जाता है।

उपरोक्त कथनों के संदर्भ में, नीच दिये गये विकल्पों में से सर्वाधिक उपयुक्त उत्तर चुनिए:

Options :

3666949545. A व R दोनों सही हैं और R, A की सही व्याख्या है

3666949546. A व R दोनों सही हैं परन्तु R, A की सही व्याख्या नहीं है

3666949547. A सही है परन्तु R सही नहीं है

3666949548. A सही नहीं है परन्तु R सही है

Question Number : 38 Question Id : 3666943058 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A body cools in 7 minutes from 60°C to 40°C. The temperature of the surrounding is 10°C. The temperature of the body after the next 7 minutes will be:

Options :

3666949549.

28°C

3666949550. 30°C

3666949551. 32°C

3666949552. 34°C

Question Number : 38 Question Id : 3666943058 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

7 मिनट में एक वस्तु 60° से 40° तक ठंडी होती है। वातावरण का तापमान 10°C है।
अगले 7 मिनट में वस्तु का तापमान होगा:

Options :

3666949549. 28°C

3666949550. 30°C

3666949551. 32°C

3666949552. 34°C

Question Number : 39 Question Id : 3666943059 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

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Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The temperature of an ideal gas is increased from 200 K to 800 K. If r.m.s. speed of gas at 200 K is v_0. Then, r.m.s. speed of the gas at 800 K will be:

Options :

3666949553. $\frac{v_0}{4}$

3666949554. $2v_0$

3666949555. v_0

3666949556. $4v_0$

Question Number : 39 Question Id : 3666943059 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक आदर्श गैस का तापमान 200 K से 800 K तक बढ़ता है। यदि 200 K पर गैस की वर्ग माध्य मूल चाल v_0 है। तब, 800 K पर गैस की वर्ग माध्य मूल चाल होगी:

Options :

3666949553. $\frac{v_0}{4}$

3666949554. $2v_0$

3666949555. v_0

3666949556. $4v_0$

Question Number : 40 Question Id : 3666943060 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The ratio of speed of sound in hydrogen gas to the speed of sound in oxygen gas at the same temperature is:

Options :

3666949557. $1:1$

3666949558. $1:2$

3666949559. $1:4$

3666949560. $4:1$

Question Number : 40 Question Id : 3666943060 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

समान तापमान पर हाइड्रोजन गैस में ध्वनि की चाल एवं आक्सीजन गैस में ध्वनि की चाल का अनुपात है:

Options :

3666949557. $1:1$

3666949558. $1:2$

3666949559. 1 : 4

3666949560. 4 : 1

Question Number : 41 Question Id : 3666943061 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

For an amplitude modulated wave the minimum amplitude is 3 V, while the modulation index is 60%. The maximum amplitude of the modulated wave is:

Options :

3666949561. 5 V

3666949562. 10 V

3666949563. 12 V

3666949564. 15 V

Question Number : 41 Question Id : 3666943061 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक आयाम मॉडुलित तरंग के लिए न्यूनतम आयाम 3 V है, जबकि मॉडुलन गुणांक 60% है।
मॉडुलित तरंग का अधिकतम आयाम है:

Options :

3666949561. 5 V

3666949562. 10 V

3666949563. 12 V

3666949564. 15 V

Question Number : 42 Question Id : 3666943062 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: Diffusion current in a p-n junction is greater than the drift current in magnitude if the junction is forward biased.

Reason R: Diffusion current in a p-n junction is from the n-side to the p-side if the junction is forward biased.

In the light of the above statements, choose the **most appropriate** answer from the options given below

Options :

3666949565. Both **A** and **R** are correct and **R** is the correct explanation of **A**

3666949566. Both **A** and **R** are correct but **R** is **NOT** the correct explanation of **A**

3666949567. **A** is correct but **R** is not correct

3666949568. **A** is not correct but **R** is correct

Question Number : 42 Question Id : 3666943062 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिये गये है: एक को अभिकथन A तथा दूसरे को कारण R से चिन्हित किया गया है

अभिकथन A: एक p-n सन्धि में विसरण धारा, अपवाह धारा से अधिक होती है यदि सन्धि अग्रदिशिक बायस हो।

कारण R: एक p-n सन्धि में विसरण धारा n-तरफ से p-तरफ की ओर होती है यदि सन्धि अग्रदिशिक बायस हो।

उपरोक्त कथनों के संदर्भ में, नीचे दिये गये विकल्पों में से सर्वाधिक उपयुक्त उत्तर चनिए:

Options :

3666949565. A व R दोनों सही हैं और R, A की सही व्याख्या है

3666949566. A व R दोनों सही हैं परन्तु R, A की सही व्याख्या नहीं है

3666949567. A सही है परन्तु R सही नहीं है

3666949568. A सही नहीं है परन्तु R सही है

Question Number : 43 Question Id : 3666943063 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A small particle of mass m moves in such a way that its potential energy $U = \frac{1}{2} m \omega^2 r^2$ where ω is constant and r is the distance of the particle from origin. Assuming Bohr's quantization of momentum and circular orbit, the radius of n^{th} orbit will be proportional to,

Options :

3666949569. n

3666949570. n^2

3666949571. $\sqrt{n}$

3666949572. $\frac{1}{n}$

Question Number : 43 Question Id : 3666943063 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

m द्रव्यमान का एक छोटा कण इस तरह से गति करता है कि इसकी स्थितिज ऊर्जा $U = \frac{1}{2} m \omega^2 r^2$ है जहाँ ω नियतांक है तथा मूल बिन्दु से कण की दूरी r है। संवेग का बोहर क्वाण्टमीकरण एवं कक्षा वृत्ताकार मानकर, n वीं कक्षा की त्रिज्या निम्न में से किसके अनुक्रमानुपाती होगी:

Options :

3666949569. n

3666949570. n^2

3666949571. $\sqrt{n}$

3666949572. $\frac{1}{n}$

Question Number : 44 Question Id : 3666943064 Question Type : MCQ Option Shuffling : Yes Is

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Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The work functions of Aluminium and Gold are 4.1 eV and and 5.1 eV respectively. The ratio of the slope of the stopping potential versus frequency plot for Gold to that of Aluminium is

Options :

3666949573. 1.24

3666949574. 1

3666949575. 1.5

3666949576. 2

Question Number : 44 Question Id : 3666943064 Question Type : MCQ Option Shuffling : Yes Is

Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एल्युमिनियम एवं सोने का कार्यफलन क्रमश: 4.1 eV व 5.1 eV है। सोना तथा एल्युमिनियम के लिए निरोधी विभव तथा आवृति के बीच प्रवणताओं का अनुपात है:

Options :

3666949573. 1.24

3666949574. 1

3666949575. 1.5

3666949576. 2

Question Number : 45 Question Id : 3666943065 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A: The phase difference of two light waves change if they travel through different media having same thickness, but different indices of refraction.

Reason R: The wavelengths of waves are different in different media.

In the light of the above statements, choose the **most appropriate** answer from the options given below

Options :

3666949577. Both **A** and **R** are correct and **R** is the correct explanation of **A**

3666949578. Both **A** and **R** are correct but **R** is **NOT** the correct explanation of **A**

3666949579. **A** is correct but **R** is not correct

3666949580. **A** is not correct but **R** is correct

Question Number : 45 Question Id : 3666943065 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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नीचे दो कथन दिये गये है: एक को अभिकथन A तथा दूसरे को कारण R से चिन्हित किया गया है

अभिकथन A : दो प्रकाश तरंगो का कलान्तर परिवर्तित होता है यदि वे समान मोटाई परन्तु अलग-अलग अपवर्तनांक के विभिन्न माध्यमों से गुजरती हैं।

कारण R: तरंगों की तरंगदैर्ध्य अलग-अलग माध्यमों में अलग-अलग होगी।

उपरोक्त कथनों के संदर्भ में, नीचे दिये गये विकल्पों में से सर्वाधिक उपयुक्त उत्तर चुनिए:

Options :

3666949577. A व R दोनों सही हैं और R, A की सही व्याख्या है

3666949578. A व R दोनों सही हैं परन्तु R, A की सही व्याख्या नहीं है

3666949579. A सही है परन्तु R सही नहीं है

3666949580. A सही नहीं है परन्तु R सही है

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Question Number : 46 Question Id : 3666943066 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The energy density associated with electric field $\vec{E}$ and magnetic field $\vec{B}$ of an electromagnetic wave in free space is given by (ϵ_0 – permittivity of free space, μ_0 – permeability of free space)

Options :

3666949581. $U_E = \frac{E^2}{2\epsilon_0}, \ U_B = \frac{\mu_0 B^2}{2}$

3666949582. $U_E = \frac{\epsilon_0 E^2}{2}, \ U_B = \frac{\mu_0 B^2}{2}$

3666949583. $U_E = \frac{E^2}{2 \epsilon_0}, U_B = \frac{B^2}{2\mu_0}$

3666949584. $U_E = \frac{\epsilon_0 E^2}{2}, U_B = \frac{B^2}{2\mu_0}$

Question Number : 46 Question Id : 3666943066 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

मुक्त आकाश में एक विद्युतचुम्बकीय तरंग के विद्युत क्षेत्र $\vec{E}$ तथा चुम्बकीय क्षेत्र $\vec{B}$ से सम्बन्धित ऊर्जा घनत्व दिया गया है (ϵ_0- मुक्त आकाश की विद्युतशीलता, μ_0 मुक्त आकाश की चुम्बकशीलता):

Options :

3666949581. $U_E = \frac{E^2}{2 \epsilon_0}, U_B = \frac{\mu_0 B^2}{2}$

3666949582. $U_E = \frac{\epsilon_0 E^2}{2}, U_B = \frac{\mu_0 B^2}{2}$

3666949583. $U_E = \frac{E^2}{2 \epsilon_0}, U_B = \frac{B^2}{2\mu_0}$

3666949584. $U_E = \frac{\epsilon_0 E^2}{2}, U_B = \frac{B^2}{2\mu_0}$

Question Number : 47 Question Id : 3666943067 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

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Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A capacitor of capacitance 150.0 μF is connected to an alternating source of emf given by E = 36 sin(120πt) V. The maximum value of current in the circuit is approximately equal to :

Options :

3666949585. $\sqrt{2}A$

3666949586. $2\sqrt{2}A$

3666949587. $\frac{1}{\sqrt{2}}A$

3666949588. $2A$

Question Number : 47 Question Id : 3666943067 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

150.0 μF धारिता का एक संधारित्र को एक प्रत्यावर्ती स्रोत से जोड़ा है जिसका विद्युत वाहक बल E = 36 sin(120πt) V है। परिपथ में धारा का अधिकतम मान लगभग बराबर है:

Options :

3666949585. $\sqrt{2}A$

3666949586. $2\sqrt{2}A$

3666949587. $\frac{1}{\sqrt{2}}A$

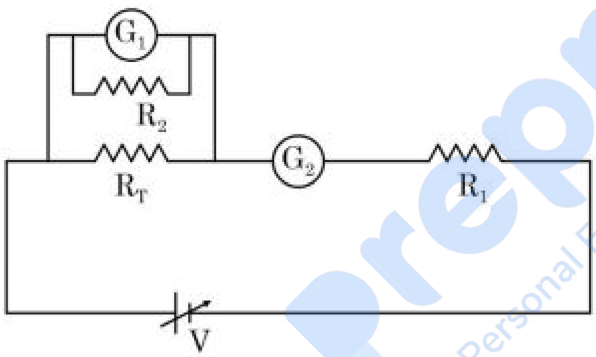
3666949588. $2A$

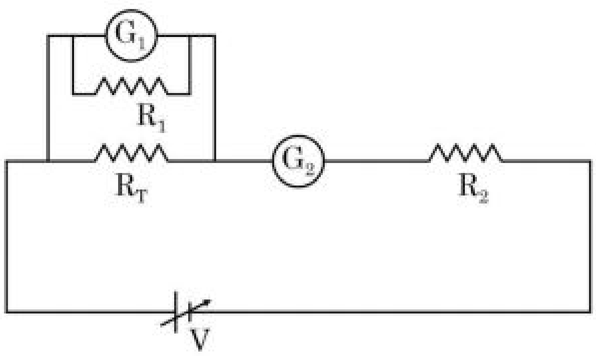
Question Number : 48 Question Id : 3666943068 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A student is provided with a variable voltage source V, a test resistor $R_T = 10\Omega$, two identical galvanometers G_1 and G_2 and two additional resistors, $R_1 = 10M\Omega$ and $R_2 = 0.001\Omega$. For conducting an experiment to verify ohm's law, the most suitable circuit is:

Options :

3666949589. 

3666949590. 

3666949591.

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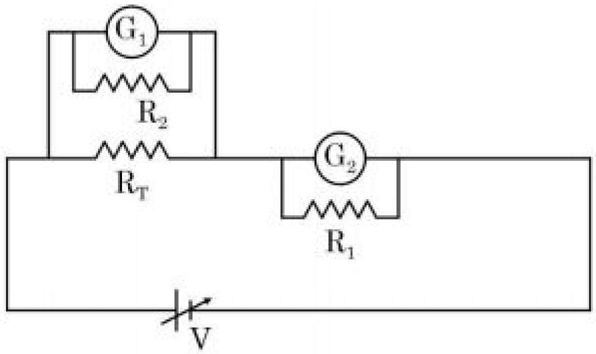
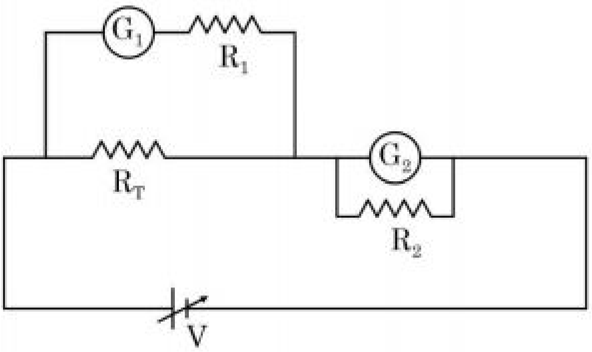




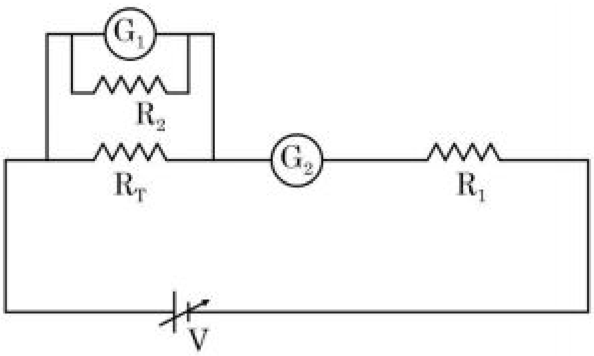
3666949592.

Question Number : 48 Question Id : 3666943068 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

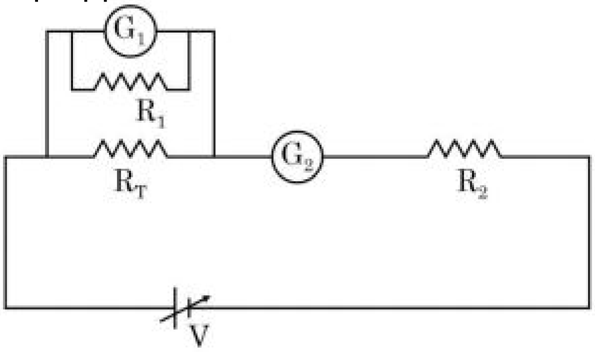
एक छात्र को एक परिवर्ती वोल्टेज स्रोत V के साथ एक परीक्षण प्रतिरोध R_T = 10Ω, दो एकसमान धारामापी G_1 व G_2 तथा दो अतिरिक्त प्रतिरोध $R_1 = 10M\Omega$ व $R_2 = 0.001\Omega$ दिये गये हैं। ओम के नियम के सत्यापन का प्रयोग करने के लिए सर्वाधिक उपयुक्त परिपथ है:

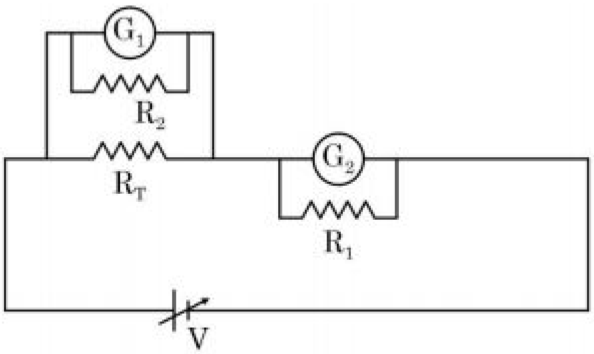
Options :

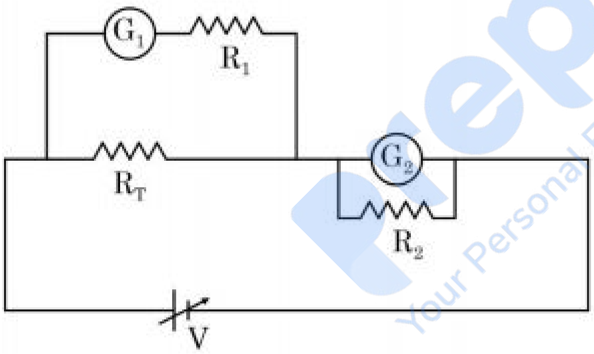


3666949589.

3666949590.



3666949591.


3666949592.


Question Number : 49 Question Id : 3666943069 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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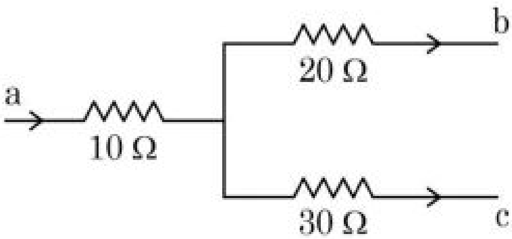
Figure shows a part of an electric circuit. The potentials at points a, b and c are 30 V, 12 V and 2 V respectively. The current through the 20 Ω resistor will be,



Options :

3666949593. 0.2 A

3666949594. 0.6 A

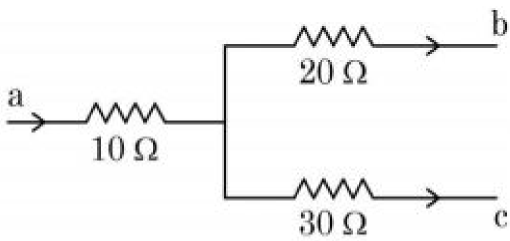
3666949595. 0.4 A

3666949596. 1.0 A

Question Number : 49 Question Id : 3666943069 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक विद्युत परिपथ के एक भाग को चित्र में दर्शाया गया है। बिन्दु a, b तथा c पर विभव क्रमश: 30v, 12v तथा 2v हैं। 20Ω प्रतिरोध में बहने वाली धारा होगी:



Options :

3666949593. 0.2 A

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3666949594. 0.6 A

3666949595. 0.4 A

3666949596. 1.0 A

Question Number : 50 Question Id : 3666943070 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A dipole comprises of two charged particles of identical magnitude q and opposite in nature. The mass 'm' of the positive charged particle is half of the mass of the negative charged particle. The two charges are separated by a distance 'l'. If the dipole is placed in a uniform electric field '$\bar{E}$'; in such a way that dipole axis makes a very small angle with the electric field, '$\bar{E}$'. The angular frequency of the oscillations of the dipole when released is given by:

Options :

3666949597. $\sqrt{\frac{4qE}{3ml}}$

3666949598. $\sqrt{\frac{8qE}{3ml}}$

3666949599. $\sqrt{\frac{4qE}{ml}}$

3666949600. $\sqrt{\frac{8qE}{ml}}$

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Question Number : 50 Question Id : 3666943070 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक द्विध्रुव, एकसमान q परिमाण तथा विपरित प्रकृति के दो आवेशित कणों से बना हुआ है। धनावेशित कण का द्रव्यमान m, ऋणवेशित कण का आधा है। दोनों आवेश एक दूसरे से 'l' दूरी पर स्थित हैं। यदि द्विध्रुव एकसमान विद्युत क्षेत्र E में इस प्रकार रखा गया है कि द्विध्रुव, वैद्युत क्षेत्र E से एक सूक्ष्म कोण बनाता है। दोलन की कोणीय आवृत्ति होगी:

Options :

3666949597. $\sqrt{\frac{4qE}{3ml}}$

3666949598. $\sqrt{\frac{8qE}{3ml}}$

3666949599. $\sqrt{\frac{4qE}{ml}}$

3666949600. $\sqrt{\frac{8qE}{ml}}$

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Physics Section B

Section Id :	366694169
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	5

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Section Marks : 20

Enable Mark as Answered Mark for Review and Clear Response : Yes

Maximum Instruction Time : 0

Sub-Section Number : 1

Sub-Section Id : 366694169

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 51 Question Id : 3666943071 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A body is dropped on ground from a height 'h_1' and after hitting the ground, it rebounds to a height 'h_2'. If the ratio of velocities of the body just before and after hitting ground is 4, then percentage loss in kinetic energy of the body is $\frac{x}{4}$. The value of x is ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 51 Question Id : 3666943071 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक पिण्ड को 'h_1' ऊँचाई से धरती पर गिराया जाता है, और धरती से टकराने के बाद यह h_2 ऊँचाई तक उछलता है। यदि धरती से टकराने के ठीक पूर्व एवं बाद पिण्ड के वेगों का अनुपात 4 है, तो पिण्ड की गतिज ऊर्जा में प्रतिशत हानि $\frac{x}{4}$ है। x का मान ______ है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 52 Question Id : 3666943072 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A ring and a solid sphere rotating about an axis passing through their centers have same radii of gyration. The axis of rotation is perpendicular to plane of ring. The ratio of radius of ring to that of sphere is $\sqrt{\frac{2}{x}}$. The value of x is ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 52 Question Id : 3666943072 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

एक समान घूर्णन त्रिज्या का एक छल्ला एवं एक ठोस गोला अपने केन्द्रों से गुजरने वाली अक्षों के परित: घूर्णन गति कर रहें है। छल्ले की घूर्णन अक्ष इसके तल के लम्बवत है। छल्ले की त्रिज्या का गोले की त्रिज्या के साथ अनुपात $\sqrt{\frac{2}{x}}$ है। x का मान ______ है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 53 Question Id : 3666943073 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A metal block of mass m is suspended from a rigid support through a metal wire of diameter 14 mm. The tensile stress developed in the wire under equilibrium state is 7×10^5 Nm^{-2}. The value of mass m is _______ kg.

(Take, $g = 9.8$ ms^{-2} and $\pi = \frac{22}{7}$)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 53 Question Id : 3666943073 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

m द्रव्यमान का एक धातु का गुटका 14 mm व्यास के एक धातु के तार द्वारा एक दृढ़ आधार से लटका है। साम्यावस्था की स्थिति में तार में तन्यता प्रतिबल $7\times10^5 Nm^{-2}$ है। द्रव्यमान m का मान _______ kg है (दिया है: $g = 9.8$ ms^{-2} तथा $\pi = \frac{22}{7}$)।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

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Text Areas : PlainText

Possible Answers :

10

Question Number : 54 Question Id : 3666943074 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Two concentric circular coils with radii 1 cm and 1000 cm, and number of turns 10 and 200 respectively are placed coaxially with centers coinciding. The mutual inductance of this arrangement will be ________ $\times 10^{-8}$ H. (Take, $\pi^2 = 10$)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 54 Question Id : 3666943074 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

1 cm तथा 1000 cm त्रिज्याओं तथा फेरों की संख्या क्रमशः 10 तथा 200 को दो सकेन्द्रीय वृत्ताकार कुण्डलियों को इनके केन्द्रों को मिलाकर सह-अक्षीय रखा गया है। इस व्यवस्था का अन्योन्य प्रेरण _______ $\times 10^{-8} H$ होगा ।

(यदि, $\pi^2 = 10$ लेकर)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

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Possible Answers :

10

Question Number : 55 Question Id : 3666943075 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A beam of light consisting of two wavelengths 7000 Å and 5500 Å is used to obtain interference pattern in Young's double slit experiment. The distance between the slits is 2.5 mm and the distance between the plane of slits and the screen is 150 cm. The least distance from the central fringe, where the bright fringes due to both the wavelengths coincide, is $n \times 10^{-5}$ m. The value of n is ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

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Question Number : 55 Question Id : 3666943075 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यंग द्विझिरी प्रयोग में व्यतिकरण पैटर्न प्राप्त करने के लिए 7000 Å एवं 5500 Å की दो तरंगदैर्ध्यों का एक प्रकाश पुँज लिया गया है। झिरियों के बीच की दूरी 2.5 mm तथा झिरियों के तल से पर्दे तक की दूरी 150 cm है। केन्द्रीय फ्रिन्ज से वह न्यूनतम दूरी, जहाँ दोनों तरंगदैर्ध्यों के कारण दीप्त फ्रिन्ज बनती है, $n \times 10^{-5}$m है। n का मान ________ है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 56 Question Id : 3666943076 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Experimentally it is found that 12.8 eV energy is required to separate a hydrogen atom into a proton and an electron. So the orbital radius of the electron in a hydrogen atom is $\frac{9}{x} \times 10^{-10}$ m.
The value of the x is : ________.

$(1 \text{ eV} = 1.6 \times 10^{-19} \text{ J}, \frac{1}{4\pi\epsilon_0} = 9 \times 10^9 \text{ Nm}^2/\text{C}^2$ and electronic charge $= 1.6 \times 10^{-19} \text{ C})$

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 56 Question Id : 3666943076 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

प्रायोगिक रूप से यह प्राप्त होता है कि एक हाइड्रोजन परमाणु को एक प्रोटॉन व एक इलैक्ट्रॉन में अलग करने के लिए 12.8 eV ऊर्जा की आवश्यकता होती है। एक हाइड्रोजन परमाणु में इलैक्ट्रॉन की कक्षीय त्रिज्या $\frac{9}{x} \times 10^{-10}$ m है। x का मान है ________

$(1 \text{ eV} = 1.6 \times 10^{-19} \text{ J}, \frac{1}{4\pi\epsilon_0} = 9 \times 10^9 \text{ Nm}^2/\text{C}^2$ एवं इलैक्ट्रान का आवेश $= 1.6 \times 10^{-19} \text{ C})$

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 57 Question Id : 3666943077 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A proton with a kinetic energy of 2.0 eV moves into a region of uniform magnetic field of magnitude $\frac{\pi}{2}\times10^{-3}$ T. The angle between the direction of magnetic field and velocity of proton is 60°. The pitch of the helical path taken by the proton is ________ cm. (Take, mass of proton = 1.6×10^{-27} kg and Charge on proton = 1.6×10^{-19} C).

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 57 Question Id : 3666943077 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

2.0 eV गतिज ऊर्जा से एक प्रोटॉन $\frac{\pi}{2}\times10^{-3}$ T परिमाण के एकसमान चुम्बकीय क्षेत्र के परिसर में गति करता है। चुम्बकीय क्षेत्र की दिशा एवं प्रोटॉन के वेग के बीच का कोण 60° है। प्रोटॉन द्वारा तय किये गये हेलीकल पथ की पिच _______ cm है (लिया है, प्रोटॉन का द्रव्यमान = 1.6×10^{-27} kg एवं प्रोटॉन का आवेश = 1.6×10^{-19} C)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

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Text Areas : PlainText

Possible Answers :

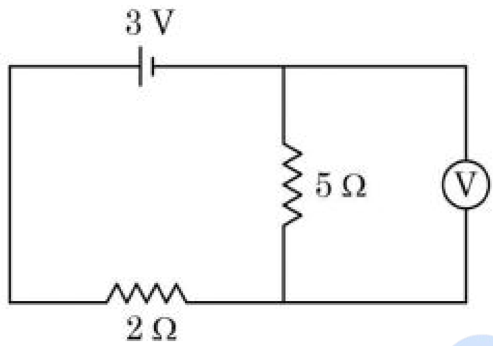
10

Question Number : 58 Question Id : 3666943078 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

As shown in the figure, the voltmeter reads 2 V across 5 Ω resistor. The resistance of the voltmeter is ________ Ω.



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

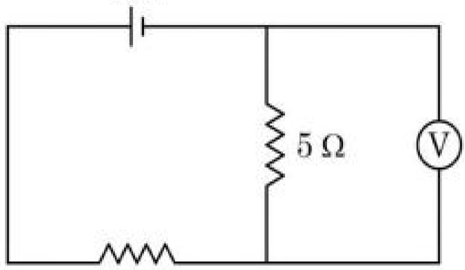
10

Question Number : 58 Question Id : 3666943078 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

प्रदर्शित चित्र में, 5 Ω प्रतिरोध के संगत वोल्टमीटर का 2 V पाठ्यांक है। वोल्टमीटर का प्रतिरोध ______ Ω है।



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

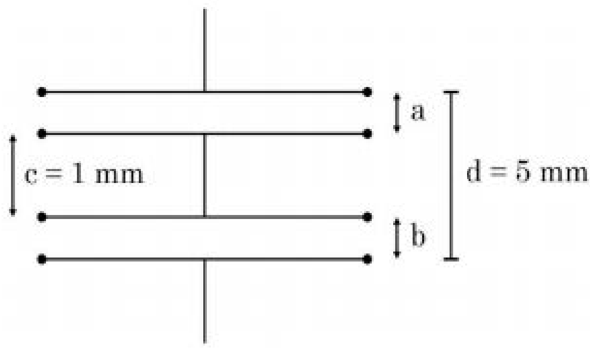
10

Question Number : 59 Question Id : 3666943079 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

As shown in the figure, two parallel plate capacitors having equal plate area of 200 cm^2 are joined in such a way that $a \neq b$. The equivalent capacitance of the combination is $x \in_0$ F. The value of x is ________.



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

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Possible Answers :

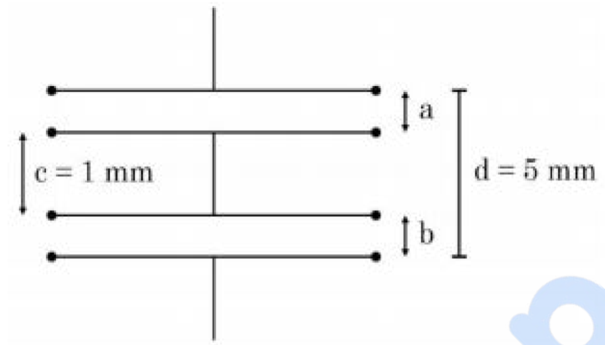
10

Question Number : 59 Question Id : 3666943079 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

प्रदर्शित चित्र में, 200 cm^2 क्षेत्रफल की एक समान पट्टिका के दो समान्तर प्लेट संधारित्र इस प्रकार जुड़े है कि $a \neq b$ । संयोजन की तुल्य धारिता $x \epsilon_0$ F है। x का मान ______ है।



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Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 60 Question Id : 3666943080 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

A simple pendulum with length 100 cm and bob of mass 250 g is executing S.H.M. of amplitude 10 cm. The maximum tension in the string is found to be $\frac{x}{40}$ N. The value of x is ________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

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Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 60 Question Id : 3666943080 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

100 cm लम्बाई व 250 g द्रव्यमान के गोलक के साथ एक सरल लोलक 10 cm आयाम की सरल आवर्त गति करता है। डोरी में अधिकतम तनाव $\frac{x}{40}$ N प्राप्त होता है। x का मान ______ है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

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Chemistry Section A

Section Id :	366694170
Section Number :	5
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80
Enable Mark as Answered Mark for Review and Clear Response :	Yes

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Maximum Instruction Time : 0

Sub-Section Number : 1

Sub-Section Id : 366694170

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 61 Question Id : 3666943081 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The volume of 0.02 M aqueous HBr required to neutralize 10.0 mL of 0.01 M aqueous $Ba(OH)_2$ is (Assume complete neutralization)

Options :

3666949611. 2.5 mL

3666949612. 5.0 mL

3666949613. 7.5 mL

3666949614. 10.0 mL

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Question Number : 61 Question Id : 3666943081 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

0.01 M जलीय $Ba(OH)_2$ के 10.0 mL को उदासीन करने के लिए आवश्यक 0.02 M जलीय HBr का आयतन है।

Options :

3666949611.

2.5 mL

3666949612. 5.0 mL

3666949613. 7.5 mL

3666949614. 10.0 mL

Question Number : 62 Question Id : 3666943082 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

If the radius of the first orbit of hydrogen atom is a_o, then de Broglie's wavelength of electron in 3rd orbit is

Options :

3666949615. $3\pi a_o$

3666949616. $6\pi a_o$

3666949617. $\frac{\pi a_o}{3}$

3666949618. $\frac{\pi a_o}{6}$

Question Number : 62 Question Id : 3666943082 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

यदि हाइड्रोजन परमाणु के प्रथम कक्षा की त्रिज्या a_0 हो तो 3 रे कक्षा में इलेक्ट्रान की दे ब्राग्ली तरंगदैर्ध्य है-

Options :

3666949615. $3\pi a_0$

3666949616. $6\pi a_0$

3666949617. $\frac{\pi a_0}{3}$

3666949618. $\frac{\pi a_0}{6}$

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Question Number : 63 Question Id : 3666943083 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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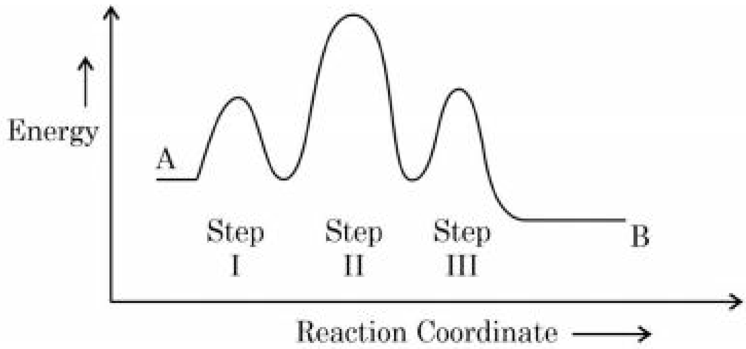
Consider the following reaction that goes from A to B in three steps as shown below:



Choose the correct option

	Number of intermediates	Number of Activated complexes	Rate determining step

Options :

3666949619.	2	3	II
3666949620.	2	3	III
3666949621.	3	2	II
3666949622.	2	3	I

Question Number : 63 Question Id : 3666943083 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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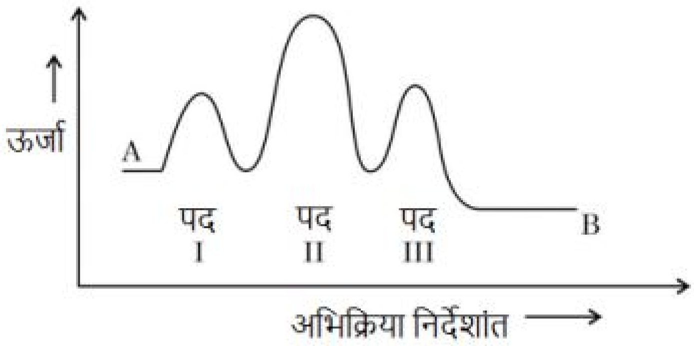
निम्नलिखित अभिक्रिया A से B तीन चरणों में होती है जैसा कि नीचे प्रदर्शित किया गया है



सही विकल्प चुनें:

	मध्यवर्थियो की संख्या	सर्वियत संकुलों की संख्या	वेग निर्धारक पद

Options :

3666949619.	2	3	II
3666949620.	2	3	III
3666949621.	3	2	II
3666949622.	2	3	I

Question Number : 64 Question Id : 3666943084 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Which one of the following elements will remain as liquid inside pure boiling water?

Options :

3666949623. Li

3666949624. Ga

3666949625. Cs

3666949626. Br

Question Number : 64 Question Id : 3666943084 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

शुद्ध उबलते पानी में निम्नलिखित में से कौन सा तत्व द्रव के रुप में होगा?

Options :

3666949623. Li

3666949624. Ga

3666949625. Cs

3666949626. Br

Question Number : 65 Question Id : 3666943085 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The product, which is not obtained during the electrolysis of brine solution is

Options :

3666949627. Cl_2

3666949628. H_2

3666949629. HCl

3666949630. $NaOH$

Question Number : 65 Question Id : 3666943085 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

उत्पाद, जोकि ब्राइन से विद्युत विश्लेषण के दौरान नहीं प्राप्त होता है।

Options :

3666949627. Cl_2

3666949628. H_2

3666949629. HCl

3666949630. $NaOH$

Question Number : 66 Question Id : 3666943086 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Structures of $BeCl_2$ in solid state, vapour phase and at very high temperature respectively are:

Options :

3666949631. Dimeric, Polymeric, Monomeric

3666949632. Polymeric, Dimeric, Monomeric

3666949633. Polymeric, Monomeric, Dimeric

3666949634. Monomeric, Dimeric, Polymeric

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Question Number : 66 Question Id : 3666943086 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$BeCl_2$ की संरचना ठोस अवस्था में, वाष्प अवस्था में और उच्च ताप पर क्रमश: है

Options :

3666949631. द्विलकी, बहुलकी, एकलकी

3666949632. बहुलकी, द्विलकी, एकलकी

3666949633. बहुलकी, एकलकी, द्विलकी

3666949634. एकलकी, द्विकलकी, बहुलकी

Question Number : 67 Question Id : 3666943087 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Ion having highest hydration enthalpy among the given alkaline earth metal ions is:

Options :

3666949635. Be^{2+}

3666949636. Ca^{2+}

3666949637. Sr^{2+}

3666949638. Ba^{2+}

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Question Number : 67 Question Id : 3666943087 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

दिये गये क्षारीय मृदा धातु आयनों में उच्चतम जलयोजन एन्थैल्पी है:

Options :

3666949635. Be^{2+}

3666949636. Ca^{2+}

3666949637. Sr^{2+}

3666949638. Ba^{2+}

Question Number : 68 Question Id : 3666943088 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Group-13 elements react with O_2 in amorphous form to form oxides of type M_2O_3 (M = element). Which among the following is the most basic oxide?

Options :

3666949639. B_2O_3

3666949640. Al_2O_3

3666949641. Ga_2O_3

3666949642. Tl_2O_3

Question Number : 68 Question Id : 3666943088 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

वर्ग 13 का तत्व अक्रिस्टलीय रुप में O_2 से अभिक्रिया करके M_2O_3 (M = तत्व) प्रकार का ऑक्सायइड देता है। निम्नलिखित में सबसे प्रबल क्षारीय ऑक्साइड है?

Options :

3666949639. B_2O_3

3666949640. Al_2O_3

3666949641. Ga_2O_3

3666949642. Tl_2O_3

Question Number : 69 Question Id : 3666943089 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

During the reaction of permanganate with thiosulphate, the change in oxidation of manganese occurs by value of 3. Identify which of the below medium will favour the reaction.

Options :

3666949643. aqueous neutral

3666949644. aqueous acidic

3666949645. both aqueous acidic and faintly alkaline

3666949646. both aqueous acidic and neutral

Question Number : 69 Question Id : 3666943089 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

परमैंग्नेट का थायोसल्फेट से अभिक्रिया के दौरान मैंगजीन के आक्सीकरण में 3 मान का परिवर्तन होता है। नीचे दिये माध्यम को पहचानें जो कि अभिक्रिया में सहायक होगा।

Options :

3666949643. जलीय उदासीन

3666949644. जलीय अम्लीय

3666949645. जलीय अम्लीय और हल्का क्षारीय दोनों

3666949646. जलीय अम्लीय और उदासीन दोनों

Question Number : 70 Question Id : 3666943090 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as "**Assertion A**" and the other is labelled as "**Reason R**"

Assertion A: In the complex $Ni(CO)_4$ and $Fe(CO)_5$, the metals have zero oxidation state.

Reason R: Low oxidation states are found when a complex has ligands capable of π-donor character in addition to the σ-bonding.

In the light of the above statements, choose the **most appropriate** answer from the options given below

Options :

3666949647. Both **A** and **R** are correct and **R** is the correct explanation of **A**

3666949648. Both **A** and **R** are correct but **R** is **NOT** the correct explanation of **A**

3666949649. **A** is correct but **R** is not correct

3666949650. **A** is not correct but **R** is correct

Question Number : 70 Question Id : 3666943090 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिये गये है: एक को अभिकथन A और दूसरे को कारण R अंकित किया गया है।

अभिकथन A: संकुलों $Ni(CO)_4$ और $Fe(CO)_5$ में धातुओं की ऑक्सीकरण अवस्था शून्य होती है।

कारण R: निम्न ऑक्सीकरण अवस्था तब होती है जब संकुल में लिगन्ड σ आबंध के साथ-साथ π दान करने का गुण रखता है।

उपरोक्त कथनों के आधार पर नीचे दिये गये विकल्पों में से सबसे उचित उत्तर को चुनें:

Options :

3666949647. A और R दोनों सत्य है और R, A की सही व्याख्या करता है।

3666949648. A और R दोनों सत्य हैं परन्तु R, A की सही व्याख्या नहीं करता है।

3666949649. A सत्य है परन्तु R असत्य है।

3666949650. A असत्य है परन्तु R सत्य है।

Question Number : 71 Question Id : 3666943091 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The group of chemicals used as pesticide is

Options :

3666949651. Dieldrin, Sodium arsinite, Tetrachloroethene

3666949652. Sodium chlorate, DDT, PAN

3666949653. DDT, Aldrin

3666949654. Aldrin, Sodium chlorate, Sodium arsinite

Question Number : 71 Question Id : 3666943091 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

पीडकनाशी के लिए उपयोग होने वाले रसायनों का समूह है:

Options :

3666949651. डाइऐल्ड्रीन, सोडियम आर्सेनेट, टेट्रक्लोरोऐथेन

3666949652. सोडियम क्लोरेट, DDT, PAN

3666949653. DDT, ऐल्ड्रीन

3666949654. ऐल्ड्रीन, सोडियम क्लोरेट, सोडियम आर्सेनेट

Question Number : 72 Question Id : 3666943092 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The IUPAC name of $K_3[Co(C_2O_4)_3]$ is:-

Options :

3666949655. Potassium tris(oxalato)cobalt(III)

3666949656. Potassium tris(oxalato)cobaltate(III)

3666949657. Potassium trioxalatocobalt(III)

3666949658. Potassium trioxalatocobaltate(III)

Question Number : 72 Question Id : 3666943092 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

$K_3[Co(C_2O_4)_3]$ का IUPAC नाम है-

Options :

3666949655. पोटैशियम ट्रिस(ऑक्सैलेटो)कोबाल्ट(III)

3666949656. पोटैशियम ट्रिस(ऑक्सैलेटो)कोबाल्टेट(III)

3666949657. पोटैशियम ट्राइऑक्सैलेटोकोबाल्ट(III)

3666949658. पोटैशियम ट्राइऑक्सैलेटोकोबाल्टेट(III)

Question Number : 73 Question Id : 3666943093 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Formation of which complex, among the following, is not a confirmatory test of Pb^{2+} ions

Options :

3666949659. lead chromate

3666949660. lead sulphate

3666949661. lead iodide

3666949662. lead nitrate

Question Number : 73 Question Id : 3666943093 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से किस संकुल का बनना Pb^{2+} आयनों का पुष्टि परिक्षण नहीं है

Options :

3666949659. लेड क्रोमेट

3666949660. लेड सल्फेट

3666949661. लेड आयोडाइड

3666949662. लेड नाइट्रेट

Question Number : 74 Question Id : 3666943094 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Element not present in Nessler's reagent is

Options :

3666949663. K

3666949664. Hg

3666949665. N

3666949666. I

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Question Number : 74 Question Id : 3666943094 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

तत्व नेसलर अभिकर्मक में उपस्थित नहीं है

Options :

3666949663. K

3666949664. Hg

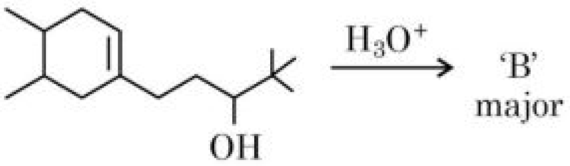
3666949665. N

3666949666. I

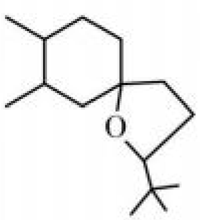
Question Number : 75 Question Id : 3666943095 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

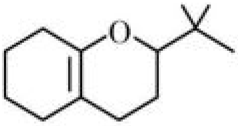
Correct Marks : 4 Wrong Marks : 1

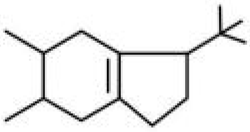
In the following reaction, 'B' is

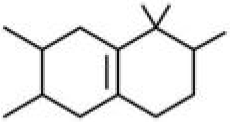


Options :

3666949667. 

3666949668. 

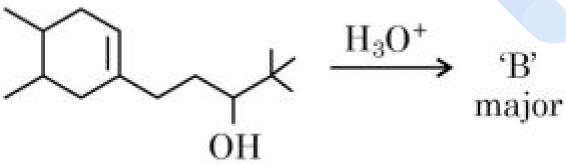
3666949669. 

3666949670. 

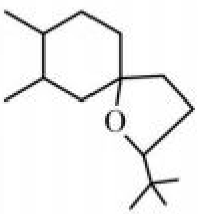
Question Number : 75 Question Id : 3666943095 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

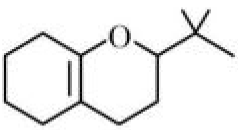
Correct Marks : 4 Wrong Marks : 1

निम्नलिखित अभिक्रिया में 'B' है-

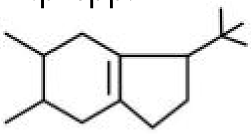


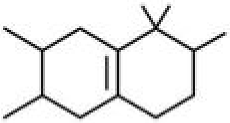
Options :

3666949667. 

3666949668. 

3666949669.

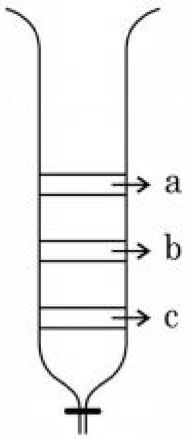


3666949670. 

Question Number : 76 Question Id : 3666943096 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

From the figure of column chromatography given below, identify incorrect statements.



A. Compound 'c' is more polar than 'a' and 'b'
B. Compound 'a' is least polar
C. Compound 'b' comes out of the column before 'c' and after 'a'
D. Compound 'a' spends more time in the column

Choose the correct answer from the options given below:

Options :

3666949671. B, C and D only

3666949672. A, B and C only

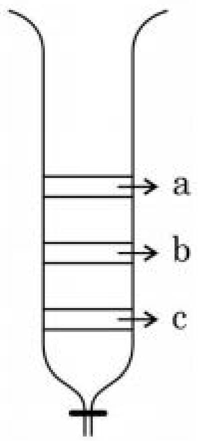
3666949673. B and D only

3666949674. A, B and D only

Question Number : 76 Question Id : 3666943096 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दिये गये कॉलम वर्णलेखन से असत्य कथनों को पहचानें



A. यौगिक 'C' यौगिक 'a' और 'b' से ज्यादा ध्रुवीय है

B. यौगिक 'a' सबसे कम ध्रुवीय है

C. यौगिक 'b' कॉलम से 'c' से पहले और 'a' के बाद निकलता है

D. यौगिक 'a' कॉलम में ज्यादा समय व्यतीत करता है

नीचे दिये गये विकल्पों में से सही उत्तर को चुनें:

Options :

3666949671. केवल B, C और D

3666949672. केवल A, B और C

3666949673.

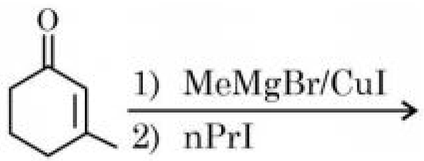
केवल B और D

3666949674. केवल A, B और D

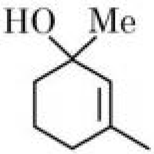
Question Number : 77 Question Id : 3666943097 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

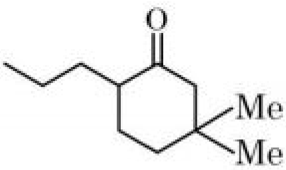
Correct Marks : 4 Wrong Marks : 1

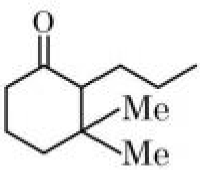
Find out the major product from the following reaction.



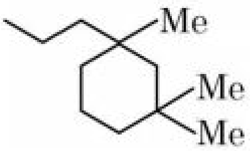
Options :

3666949675. 

3666949676. 

3666949677. 

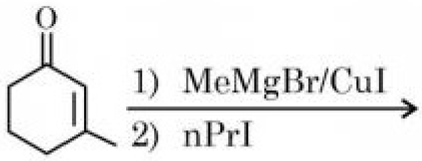
3666949678.



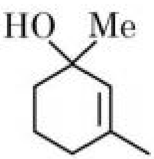
Question Number : 77 Question Id : 3666943097 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

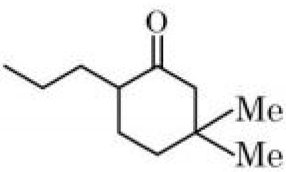
Correct Marks : 4 Wrong Marks : 1

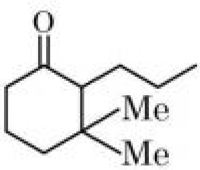
निम्नलिखित अभिक्रिया में प्रमुख उत्पाद को खोजें।

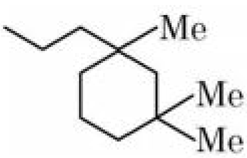


Options :

3666949675. 

3666949676. 

3666949677. 

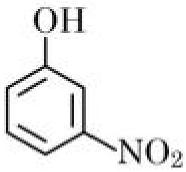
3666949678. 

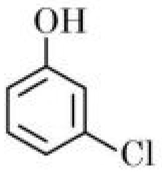
Question Number : 78 Question Id : 3666943098 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

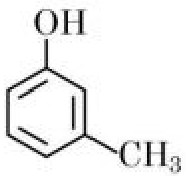
Correct Marks : 4 Wrong Marks : 1

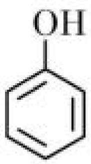
The strongest acid from the following is

Options :

3666949679. 

3666949680. 

3666949681. 

3666949682. 

Question Number : 78 Question Id : 3666943098 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से प्रबलतम अम्ल है

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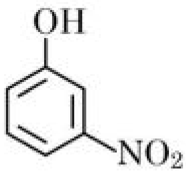
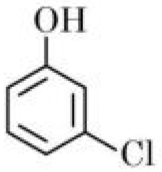
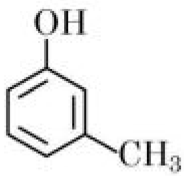
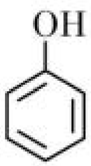
Options :

3666949679. 

3666949680. 

3666949681. 

3666949682. 

Question Number : 79 Question Id : 3666943099 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Match **List I** with **List II**

List I	**List II**
Natural Amino acid	**One Letter Code**
(A) Arginine	(I) D
(B) Aspartic acid	(II) N
(C) Asparagine	(III) A
(D) Alanine	(IV) R

Choose the correct answer from the options given below:

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Options :

3666949683. (A) – IV, (B) – I, (C) – II, (D) – III

3666949684. (A) – III, (B) – I, (C) – II, (D) – IV

3666949685. (A) – I, (B) – III, (C) – IV, (D) – II

3666949686. (A) – IV, (B) – I, (C) – III, (D) – II

Question Number : 79 Question Id : 3666943099 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

सूची I को II से सुमेलित करें

सूची – I प्राकृतिक ऐमीनो अम्ल	सूची – II एक अक्षर कोड
A. आर्जिनीन	I. D
B. ऐस्पार्टिक अम्ल	II. N
C. ऐस्पेराजीन	III. A
D. ऐलानिन	IV. R

नीचे दिये गये विकल्पों में से सही उत्तर को चुनें:

Options :

3666949683. (A) – IV, (B) – I, (C) – II, (D) – III

3666949684. (A) – III, (B) – I, (C) – II, (D) – IV

3666949685. (A) – I, (B) – III, (C) – IV, (D) – II

3666949686. (A) – IV, (B) – I, (C) – III, (D) – II

Question Number : 80 Question Id : 3666943100 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: Morphine is a narcotic analgesic. It helps in relieving pain without producing sleep.

Statement II: Morphine and its derivatives are obtained from opium poppy.

In the light of the above statements, choose the **correct** answer from the options given below

Options :

3666949687. Both Statement I and Statement II are true

3666949688. Both Statement I and Statement II are false

3666949689. Statement I is true but Statement II is false

3666949690. Statement I is false but Statement II is true

Question Number : 80 Question Id : 3666943100 Question Type : MCQ Option Shuffling : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

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Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

नीचे दो कथन दिये गये हैं:

कथन I: मॉर्फीन एक स्वापक पीड़ाहारी है यह बिना नींद लाये पीड़ा से मुक्ति देते है।

कथन II: मॉर्फीन और इसके व्युत्पन्न ओपियम पौपी से प्राप्त होते हैं।

ऊपर दिये गये कथनों के आधार पर नीचे दिये गये विकल्पों में से सही उत्तर को चुनें:

Options :

3666949687. कथन I और कथन II दोनों सत्य हैं

3666949688. कथन I और कथन II दोनों असत्य हैं

3666949689. कथन I सत्य और कथन II असत्या है

3666949690. कथन I असत्य और कथन II सत्य है।

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Chemistry Section B

Section Id :	366694171
Section Number :	6
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	5
Section Marks :	20
Enable Mark as Answered Mark for Review and Clear Response :	Yes

Maximum Instruction Time : 0

Sub-Section Number : 1

Sub-Section Id : 366694171

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 81 Question Id : 3666943101 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Number of crystal systems from the following where body centred unit cell can be found, is ___________

Cubic, tetragonal, orthorhombic, hexagonal, rhombohedral, monoclinic, triclinic

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 81 Question Id : 3666943101 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से क्रिस्टल तंत्रों की संख्या ________ है जहाँ पर अंत: केन्द्रित एकक कोष्ठिका पायी जा सकती है घनीय, द्विसमलंबाक्ष, विषमलंबाक्ष, षट्कोणीय, त्रिसमनताक्ष, एकनताक्ष, त्रिनताक्ष

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 82 Question Id : 3666943102 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The number of species having a square planar shape from the following is ________.

XeF_4, SF_4, SiF_4, BF_4^-, BrF_4^-, $[Cu(NH_3)_4]^{2+}$, $[FeCl_4]^{2-}$, $[PtCl_4]^{2-}$

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 82 Question Id : 3666943102 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से वर्ग समतली आकार वाले जातियों की संख्या ______ है

XeF_4, SF_4, SiF_4, BF_4^-, BrF_4^-, $[Cu(NH_3)_4]^{2+}$, $[FeCl_4]^{2-}$, $[PtCl_4]^{2-}$

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 83 Question Id : 3666943103 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Consider the following data

Heat of combustion of $H_2(g)$ = -241.8 kJ mol^{-1}

Heat of combustion of C(s) = -393.5 kJ mol^{-1}

Heat of combustion of $C_2H_5OH(l)$ = -1234.7 kJ mol^{-1}

The heat of formation of $C_2H_5OH(l)$ is (–)____________ kJ mol^{-1} (Nearest integer).

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 83 Question Id : 3666943103 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित आँकडों पर ध्यान दें

$H_2(g)$ की दहन ऊष्मा = -241.8 kJ mol^{-1}

C(s) की दहन ऊष्मा = -393.5 kJ mol^{-1}

$C_2H_5OH(l)$ की दहन ऊष्मा = -1234.7 kJ mol^{-1}

$C_2H_5OH(l)$ की विरचन ऊष्मा (-) _______ kJ mol^{-1} है। (निकटतम पूर्णांक)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

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Text Areas : PlainText

Possible Answers :

10

Question Number : 84 Question Id : 3666943104 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Consider the following pairs of solution which will be isotonic at the same temperature. The number of pairs of solutions is / are ___________.

A. 1 M aq. NaCl and 2 M aq. urea

B. 1 M aq. $CaCl_2$ and 1.5 M aq. KCl

C. 1.5 M aq. $AlCl_3$ and 2 M aq. Na_2SO_4

D. 2.5 M aq. KCl and 1 M aq. $Al_2(SO_4)_3$

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 84 Question Id : 3666943104 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित विलयन जोड़ो को ध्यान दे जोकि समान ताप पर समपरासारी हैं

A. 1M जलीय NaCl और 2M जलीय यूरिया

B. 1M जलीय $CaCl_2$ और 1.5M जलीय KCl

C. 1.5M जलीय $AlCl_3$ और 2M जलीय Na_2SO_4

D. 2.5M जलीय KCl और 1M जलीय $Al_2(SO_4)_3$

Response Type : Numeric

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Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 85 Question Id : 3666943105 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The equilibrium composition for the reaction $PCl_3 + Cl_2 \rightleftharpoons PCl_5$ at 298 K is given below:

$[PCl_3]_{eq} = 0.2 \text{ mol L}^{-1}$, $[Cl_2]_{eq} = 0.1 \text{ mol L}^{-1}$, $[PCl_5]_{eq} = 0.40 \text{ mol L}^{-1}$

If 0.2 mol of Cl_2 is added at the same temperature, the equilibrium concentrations of PCl_5 is _______________ $\times 10^{-2}$ mol L^{-1}

Given: K_c for the reaction at 298 K is 20

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 85 Question Id : 3666943105 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

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298 K ताप पर अभिक्रिया $PCl_3 + Cl_2 \rightleftharpoons PCl_5$ का साम्यवस्था घटक

नीचे दिये गया है:

$[PCl_3]_{eq} = 0.2 \text{ mol L}^{-1}$, $[Cl_2]_{eq} = 0.1 \text{ mol L}^{-1}$, $[PCl_5]_{eq} = 0.40 \text{ mol L}^{-1}$

यदि समान ताप पर Cl_2 का 0.2 मोल डाला तो साम्यवस्था पर PCl_5 की सान्द्रता
_____________ $\times 10^{-2}$ mol L^{-1} होगी।

दिया गया है: 298 K ताप पर अभिक्रिया का K_c 20 है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 86 Question Id : 3666943106 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The standard reduction potentials at 298 K for the following half cells are given below:

$NO_3^- + 4H^+ + 3e^- \rightarrow NO(g) + 2H_2O \quad E^\theta = 0.97 \text{ V}$

$V^{2+}(aq) + 2e^- \rightarrow V \quad E^\theta = -1.19 \text{ V}$

$Fe^{3+}(aq) + 3e^- \rightarrow Fe \quad E^\theta = -0.04 \text{ V}$

$Ag^+(aq) + e^- \rightarrow Ag(s) \quad E^\theta = 0.80 \text{ V}$

$Au^{3+}(aq) + 3e^- \rightarrow Au(s) \quad E^\theta = 1.40 \text{ V}$

The number of metal(s) which will be oxidized by NO_3^- in aqueous solution is _________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 86 Question Id : 3666943106 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

298 K ताप पर निम्नलिखित अर्ध सेलों का मानक अपचयन विभव नीचे दिया गया है:

$NO_3^- + 4H^+ + 3e^- \rightarrow NO(g) + 2H_2O \quad E^\theta = 0.97\ V$

$V^{2+}(aq) + 2e^- \rightarrow V \quad E^\theta = -1.19\ V$

$Fe^{3+}(aq) + 3e^- \rightarrow Fe \quad E^\theta = -0.04\ V$

$Ag^+(aq) + e^- \rightarrow Ag(s) \quad E^\theta = 0.80\ V$

$Au^{3+}(aq) + 3e \rightarrow Au(s) \quad E^\theta = 1.40\ V$

जलीय विलयन में NO_3^- द्वारा ऑक्सीकृत धातु/धातुओं की संख्या होगी?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 87 Question Id : 3666943107 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

The number of colloidal systems from the following, which will have 'liquid' as the dispersion medium, is ____________

Gem stones, paints, smoke, cheese, milk, hair cream, insecticide sprays, froth, soap lather

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

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Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 87 Question Id : 3666943107 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से कोलॉइडी तंत्रों की संख्या _______ है जिसमें परिक्षेपण माध्यम 'द्रव' होगा। रत्न प्रस्तर, प्रलेप, धुआँ, पनीर, दूध, बालों की क्रीम, कीटनाशक स्प्रे, फेन, साबुन के झाग

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 88 Question Id : 3666943108 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

In an ice crystal, each water molecule is hydrogen bonded to _____________ neighbouring molecules.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

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Question Number : 88 Question Id : 3666943108 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

बर्फ क्रिस्टल में प्रत्येक जल अणु अपने _______ पडोसी अणुओं से हाइड्रोजन आबंध बनाता है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 89 Question Id : 3666943109 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Among the following, the number of compounds which will give positive iodoform reaction is _______________

(a) 1-Phenylbutan-2-one

(b) 2-Methylbutan-2-ol

(c) 3-Methylbutan-2-ol

(d) 1-Phenylethanol

(e) 3,3-dimethylbutan-2-one

(f) 1-Phenylpropan-2-ol

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

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Question Number : 89 Question Id : 3666943109 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

निम्नलिखित में से धनात्मक आयोडोफार्म अभिक्रिया देने वाले यौगिकों की संख्या _______ है।

(A) 1- फेनिलब्यूटेन – 2- ऑन

(B) 2- मेथिलब्यूटेन– 2- ऑल

(C) 3- मेथिलब्यूटेन – 2- ऑल

(D) 1- फेनिलएथेनॉल

(E) 3,3- डाइमेथिलब्यूटेन – 2- ऑन

(F) 1- फेनिलप्रोपेन – 2- ऑल

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Question Number : 90 Question Id : 3666943110 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

Number of isomeric aromatic amines with molecular formula $C_8H_{11}N$, which can be synthesized by Gabriel Phthalimide synthesis is ___________.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

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Question Number : 90 Question Id : 3666943110 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Wrong Marks : 1

आणविक सूत्र $C_8H_{11}N$ के समावयवी ऐरोमैटिक ऐमीनों की संख्या ______ है जिन्हें गैब्रियल थैलिमाइड संश्लेषण से संश्लेषित किया जा सकता है।

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

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